FLOOD 8578

(No. 49 February 2005)

California is often subjected to severe and prolonged winter storms. Rain and flood damage tend to affect large portions of the state. In addition to the deluge of rain and high winds, other incidents and secondary events challenge the emergency response systems of local jurisdictions. Levee breaks, mudslides, avalanches, high surf, high tides, debris flows and power failures are all part of the myriad disasters associated with storms. Storms also create the potential for future devastation. California's cropland is subject to flooding and erosion; too much water also puts added stress on reservoirs. As the population of the state continues to grow, the devastation accompanying each flood increases.

Floods are generally classified either as slow-rise or flash floods. Slow-rise floods may be preceded by a warning period lasting from hours, to days or weeks. Evacuation and sandbagging for a slow-rise flood may lessen flood-related damage. Conversely, flash floods are difficult to prepare for because of the short warning time. Flash flood warnings often require immediate evacuation.

Once flooding begins, personnel are needed to rescue people and animals, secure utilities and flooded areas, and control traffic. These actions create additional strain on local agencies, requiring additional personnel and resources.

IMMINENT OR ACTUAL DAM FAILURE 8578.1

(No. 49 February 2005)

The many water storage projects in California create potential hazards to the general public. Because of increased residential development, areas considered safe when dams are built may later become hazardous. As the population continues to grow, the potential structural failure of a large dam poses an increasing hazard for sizable numbers of people who would be exposed to a sudden inundation. Dam failures can be cause by earthquakes, rapidly rising flood waters, erosion, equipment failure(s), act of terrorism, and structural design flaws.

In general, there are three kinds of dams: earth and rock fill, concrete arch or hydraulic fill, and concrete gravity. Each dam has different failure characteristics. An earth-rock fill dam may fail gradually due to erosion. A concrete arch can fail almost instantaneously. A concrete gravity dam may fail either at once or gradually.

Dam failure can cause great loss of life, damage to property and infrastructure, and create ensuing hazards, as well as displacing people living in the inundation path. Electric generating facilities and transmission lines can also be damaged and affect life support systems in communities outside the immediate hazard area.

The state Office of Emergency Services is responsible for requiring inundation maps for any dam whose failure would threaten the lives and property of people living downstream. The State Department of Water Resources – Division of Safety of Dams has regulatory authorities (as provided in CA Water Code Division 3) for over 1,200 public and private dams statewide.

Local jurisdictions are responsible for providing emergency dam failure response and evacuation plans for populations known to be at risk.

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